

**Amendment to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-27 (Canceled)

Please enter the following new claims:

28. (New) A system for automated extraction of data from a molecular array having features arranged in a regular pattern, the system comprising:

a scanning component that produces images of the molecular array representing intensities of data signals emitted from discrete positions on a surface of the molecular array;

a computer program that processes the images of the molecular array produced by the scanning component to index features in the images of the molecular array corresponding to molecules bound to features of the molecular array and that extracts data from the indexed features within images of the molecular array; and a computer for executing the computer program.

29. (New) A The system of claim 28 wherein data signal intensities emanating from discrete positions on the surface of the molecular array include:

radiation emitted by radioisotopes incorporated into molecules bound to features of the molecular array;

fluorescent emission from fluorophores incorporated into molecules bound to features of the molecular array; and

light emission from chemoluminescent moieties incorporated into molecules bound to features of the molecular array.